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**CH2MHILL**

CH2M HILL

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Milwaukee, WI

53202-4421

Mailing address:

P.O. Box 2090

Milwaukee, WI

53201-2090

Tel 414.272.2426

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May 7, 1999

143104.PP.04

Mr. Michael McAteer  
Work Assignment Manager (SR-6J)  
U.S. Environmental Protection Agency, Region 5  
77 West Jackson Boulevard  
Chicago, IL 60604

Dear Mr. McAteer:

Subject: QAPP Addendum to QAPP Revision 1  
Environmental Conservation and Chemical Corporation Site, Zionsville, Indiana  
WA No. 008-RXBF-0530, Contract No. 68-W6-0025

Enclosed please find four copies of the QAPP Addendum to QAPP Revision 1. The QAPP Addendum is being submitted to reflect two personnel changes (Senior Reviewer and Project Chemist) and to provide a SAS for each of the laboratory analyzed chemical parameters.

Please do not hesitate to contact me at (414) 272-2426 if you have any questions or concerns.

Sincerely,

CH2M HILL

Adrian Hanley  
Project Chemist

Enclosures

cc: Stephen Nathan, PO/USEPA, Region 5 (w/o enclosure)  
Eben Greybourne, CO/USEPA, Region 5 (w/o enclosure)  
Ike Johnson, PM/CH2M HILL, Milwaukee  
Dan Plomb, DPM/CH2M HILL, Milwaukee  
Lauri Gorton, Senior Reviewer/CH2M HILL, Milwaukee  
Joe Sandrin/CH2M HILL, Milwaukee  
Cherie Wilson, AA/CH2M HILL, Milwaukee  
Library/CH2M HILL, Milwaukee

**QUALITY ASSURANCE PROJECT PLAN (QAPjP) ADDENDUM**  
**Remedial Action Oversight**

**Environmental Conservation and Chemical Corporation Site**  
**Zionsville, Indiana**

**WA No. 008-ROBF-0530 / Contract No. 68-W8-0025**

**May 10, 1999**

**Revision 2**

QUALITY ASSURANCE PROJECT PLAN (QAPP) ADDENDUM  
Remedial Action Oversight  
Environmental Conservation and Chemical Corporation Site  
Zionsville, Indiana  
WA No. 008-ROBF-0530 / Contract 68-W8-0025

Prepared by: CH2M HILL

Date: May 10, 1999

Approved by:

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USEPA, Region 5, Remedial Project Manager  
Michael McAteer

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USEPA, Region 5, Quality Assurance Reviewer

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CH2M HILL Site Manager  
Tim Harrison

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CH2M HILL Senior Reviewer  
Lauri Gorton

# 1.0 Introduction

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This is an addendum to the April 13, 1998 QAPjP. The following sections have been modified and are included: the analytical methods in Table 2-3; the Data Quality Objectives in Section 2.6; the QA Manager has been changed to Senior Reviewer in Section 3.5; the Project Chemist and CH2M HILL Contract Specialist have changed in Sections 3.8 and 3.9; and Appendix B has additional SASs along with several revisions to the original SASs.

Sections not provided in this addendum have not been modified and should be referenced in the original QAPjP.

## 2.6 Data Quality Objectives

Data Quality Objectives (DQOs) are qualitative and quantitative statements which specify the data quality required to support decisions made during RA activities and are based on the end uses of the data to be collected. As such, different data uses may require different data quality levels. Three levels of analytical quality that will be obtained to address the various data uses and the QC effort required to meet the DQOs. These levels are:

**Confirmational Data.** This provides the highest level of data quality and is used for purposes of risk assessment, evaluation of remedial alternatives and PRP determination. These analyses require full Contract Laboratory Program (CLP) analytical and data validation procedures in accordance with EPA-recognized protocol.

**Nonstandard Data.** This refers to analyses by nonstandard protocols, for example, when exacting detection limits or analysis of an unusual chemical compound are required. These analyses often require method development or adaptation. These analyses require full CLP analytical and data validation procedures in accordance with EPA-recognized protocol.

A summary of the data to be collected, intended data uses, and DQO levels is provided in Table 2-8.

## 3.5 Senior Reviewer

CH2M HILL's Senior Reviewer is Lauri Gorton. The Senior Reviewer will remain independent of direct job involvement and day-to-day operations and has direct access to management staff, as necessary, to resolve QA disputes. Specific functions and duties include the following:

- Provide QA review of various phases of the project, as necessary
- Review QA plans and procedures
- Provide QA technical assistance to project staff, as necessary

## 3.8 CH2M HILL Project Chemist

Adrian Hanley is the Project Chemist. He will be responsible for tracking data and overseeing the data evaluation. Specific responsibilities include the following:

- Schedule the analytical laboratories
- Oversee the tracking of samples and data from the time of field collection until results are entered into a database
- Coordinate activities with laboratories and data validators

- Oversee data validation and production of result tables
- Evaluate data usability

### **3.9 CH2M HILL Contract Specialist**

Matt Kluge is CH2M HILL's ARCS Program APM-ADMIN. He will be responsible for the contract documents created in support of RA activities. Specific responsibilities include the following:

- Contracting the analytical laboratories
- Contracting the subcontractors
- Resolving any contract disputes

**TABLE 2-3**  
**Analytical Methods**

<b>Sample Type</b>	<b>Chemical Analysis<sup>(1)</sup></b>	<b>Analytical Method<sup>(2)</sup></b>
Soil Samples	VOCs 1,2-Dichlorobenzene Phenol	SW-846 Method 8260B SW-846 Method 8270C SW-846 Method 8270C
Onsite Subsurface Water and Offsite (Background-Only) Subsurface Water Samples	VOCs BNAs PCBs Chromium VI (Cr <sup>6+</sup> ) Tin Antimony Arsenic Other Metals Cyanide	SW-846 Method 8260B SW-846 Method 8270C USEPA Method 1668 SW-846 Method 7195, 7196A, or 7197 SW-846 Method 6010A USEPA Method 200.8 USEPA Method 1632 CLP SOW ILM04.0 CLP SOW ILM04.0-Modified <sup>(3)</sup>
Offsite Surface Water and Subsurface Water Samples Compliance Monitoring	VOCs BNAs PCBs Chromium VI Arsenic Other Metals Cyanide	SW-846 Method 8260B SW-846 Method 8270C USEPA Method 1668 SW-846 Method 7195 or 7197 USEPA Method 1632 CLP SOW ILM04.0 CLP SOW ILM04.0-Modified <sup>(3)</sup>
Offsite Background Subsurface Water (1st year only—if required) Samples	VOCs BNAs PCBs Chromium VI (Cr <sup>6+</sup> ) Tin Antimony Arsenic Other Metals Cyanide	SW-846 Method 8260B SW-846 Method 8270C USEPA Method 1668 SW-846 Method 7195 or 7197 SW-846 Method 6010A USEPA Method 200.8 USEPA Method 1632 CLP SOW ILM04.0 CLP SOW ILM04.0—Modified <sup>(3)</sup>

<sup>(1)</sup> The specific parameters to be analyzed for each matrix are listed in Tables 2-4 through 2-6.

<sup>(2)</sup> CLP SOW = Contract Laboratory Program Statement of Work.

<sup>(3)</sup> The corresponding CLP method will be modified by the laboratory to achieve detection limits lower than those specified in the method.

**Key**

VOCs = Volatile Organic Compounds

BNAs = Base Neutral/Acids

PCBs = Polychlorinated Biphenyls

**TABLE 2-7**  
 Sample Containers, Preservatives, and Holding Times—ECC Site

Analysis	Container Type	Preservation and Storage Requirements	Maximum Holding Time
Soil- VOCs	2 x 5 gr. EnCore Sampler and 1 x 25 gr. EnCore Sampler	4°C	48 hours
Soil- 1,2-Dichlorobenzene Phenol	Two 8-ounce glass jars <sup>(a)</sup>	4°C; protect from light	14/40 days <sup>(b)</sup>
Water- VOCs	Three 40-mL glass vials <sup>(a)</sup>	HCl to pH ≤ 2; 4°C; protect from light	14 days
Water- BNAs	Two 1-liter amber glass jars <sup>(a)</sup>	4°C; protect from light	7/40 days <sup>(b)</sup>
Water- PCBs	Two 1-liter amber glass jars <sup>(a)</sup>	4°C; protect from light	7/40 days <sup>(b)</sup>
Water- Metals	One 1-liter poly bottle <sup>(a)</sup>	HNO <sub>3</sub> to pH ≤ 2; 4°C; protect from light	6 months (Mercury = 28 days)
Water- Chromium VI (CR +6)	One 1-liter poly bottle <sup>(a)</sup>	4°C; protect from light	24 hours
Water- Cyanide	One 500-mL poly bottle <sup>(a)</sup>	NaOH to pH > 12; 4°C	14 days

<sup>(a)</sup> Teflon-lined cap or septa.

<sup>(b)</sup> Days to extraction/days to analysis



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U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
Metals SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of select metals in water samples. The metals to be analyzed include: Ag, Ba, Be, Cd, Pb, Mn, Ni, V, and Zn. The laboratory will follow CLP SOW ILM04.0. Sample results will be reported in µg/L

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 43 water samples plus QA/QC samples (field duplicates and blanks). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analysis according to the CLP SOW ILM04.0.

Samples will be preserved in the field with HNO<sub>3</sub> to pH<2, and stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

5/016-6/96

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the CLP SOW ILM04.0. Dilute samples with sample concentrations greater than the highest standard.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the CLP SOW ILM04.0. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in µg/L.

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the CLP SOW, 10/91.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

I. **DATA REQUIREMENTS**

5/016-6/96

Parameter	Detection Limit (µg/L)	Precision Desired
<u>Silver</u>	<u>10</u>	<u>± 20 percent</u>
<u>Barium</u>	<u>50</u>	<u>± 20 percent</u>
<u>Beryllium</u>	<u>2</u>	<u>± 20 percent</u>
<u>Cadmium</u>	<u>5</u>	<u>± 20 percent</u>
<u>Lead</u>	<u>10</u>	<u>± 20 percent</u>
<u>Manganese</u>	<u>15</u>	<u>± 20 percent</u>
<u>Nickel</u>	<u>40</u>	<u>± 20 percent</u>
<u>Vanadium</u>	<u>50</u>	<u>± 20 percent</u>
<u>Zinc</u>	<u>20</u>	<u>± 20 percent</u>

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

## II. QC REQUIREMENTS

As required by the CLP SOW ILM04.0

<u>Audit</u>	<u>Frequency of Audits</u>	<u>Limits</u>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>+/- 20% recovery</u>
<u>Matrix Spike</u>	<u>at least one per group of 20 or fewer samples</u>	<u>80-120% recovery</u>
<u>Matrix Spike Duplicate</u>	<u>at least one per group of 20 or fewer samples</u>	<u>80-120% recovery; &lt;20% RPD</u>
<u>Serial Dilution</u>	<u>at least one per group of 20 or fewer samples</u>	<u>10 % Difference</u>

## III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

<b>SAS Number</b> <b>Sn and Sb SAS</b>
---

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of tin and antimony in water samples. The laboratory will follow SW846 Method 6010A. Sample results will be reported in µg/L

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of eight water samples plus QA/QC samples (field duplicates and blanks). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Sample analysis shall be in accordance with SW846 Method 6010A.

Samples will be preserved in the field with HNO<sub>3</sub> to pH<2, and stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the SW846 Method 6010A. Dilute samples with sample concentrations greater than the highest standard.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the SW846 Method 6010A. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in the CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in  $\mu\text{g/L}$ .

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the CLP SOW, 10/91.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

#### I. DATA REQUIREMENTS

Parameter	Detection Limit	Precision Desired
	( $\mu\text{g/L}$ )	
Tin	200	$\pm 20$ percent
Antimony	0.2	$\pm 20$ percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

**II. QC REQUIREMENTS**

As required by the SW846 Method 6010A.

<u>Audit</u>	<u>Frequency of Audits</u>	<u>Limits</u>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>+/- 20% recovery</u>
<u>Matrix Spike</u>	<u>at least one per group of 20 or fewer samples</u>	<u>80-120% recovery</u>
<u>Matrix Spike Duplicate</u>	<u>at least one per group of 20 or fewer samples</u>	<u>80-120% recovery; &lt;20% RPD</u>
<u>Serial Dilution</u>	<u>at least one per group of 20 or fewer samples</u>	<u>10 % Difference</u>

**III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:**

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
VOCs in Water SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B. Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of volatile organic compounds (VOCs) in 56 water samples. The concentration of VOCs will be analyzed in water samples by gas chromatography/mass spectrometry (GC/MS). Sample results will be reported as µg/L.

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 56 water samples plus QA/QC samples (duplicates, blanks and MS/MSD). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analytical protocol taken from SW846 Method 8260B.

Samples will be preserved in the field with HCL to pH<2, and stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the SW846 Method 8260B. The initial calibration curve shall have at least five different levels of standards. The linearity of the initial calibration must be less than 30 percent RSD and RRF greater than 0.05. The low standard should be a concentration at or near the reporting limit. The laboratory should use the nearest internal standard when determining the response factor. Dilute samples with sample concentrations greater than the highest standard. The holding time shall not exceed 14 days from sample collection.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the SW846 Method 8260B. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in the CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in µg/L.

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory is to conduct matrix spike and matrix spike duplicate (MS/MSD) analyses and report the results on the appropriate form.

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the SW846 Method 8260B.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

I. **DATA REQUIREMENTS**



5/016-6/96

Parameter	Detection Limit (µg/L)	Precision Desired
Acetone	5	± 20 percent
1,1-Dichloroethene	1	± 20 percent
1,2-Dichloroethene(total)	1	± 20 percent
Ethylbenzene	1	± 20 percent
Methylene Chloride	2	± 20 percent
Methyl Ethyl Ketone	5	± 20 percent
Methyl Isobutyl Ketone	5	± 20 percent
Tetrachloroethene	0.6	± 20 percent t
Toluene	1	± 20 percent
1,1,1-Trichloroethane	1	± 20 percent
1,1,2-Trichloroethane	0.4	± 20 percent
Trichloroethene	1	± 20 percent
Vinyl Chloride	1	± 20 percent
Total Xylenes	1	± 20 percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

## II. QC REQUIREMENTS

As required by the SW846 Method 8260B.

<u>Audit</u>	<u>Frequency of Audits</u>	<u>Limits</u>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>MS/MSD</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>Surrogate spiking compounds</u>	<u>surrogates spiked into all samples (incl. QC samples)</u>	<u>% recoveries must be in control</u>
<u>Internal standard compounds</u>	<u>compounds spiked into all samples (incl. QC samples)</u>	<u>areas -50 to +100% from the last daily calibration check standard</u>

## III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
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Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

<b>SAS Number</b> <b>VOCs in Soil SAS</b>
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SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B. Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: may 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of volatile organic compounds (VOCs) in soil samples. The concentration of VOCs will be analyzed in soil samples by gas chromatography/mass spectrometry (GC/MS). Sample results will be reported on a dry weight basis in  $\mu\text{g}/\text{kg}$ .

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of approximately 69 soil samples plus QA/QC samples (duplicates and MS/MSD). All samples are low concentration soil samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

Estimated April 1998 through December 2000

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analytical protocol taken from SW846 Methods 5035/8260B.

Samples will be stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

The samples shall be collected with EnCore samplers in accordance with SW846 Method 5035. The samples shall be appropriately preserved or analyzed within 48 hours.

Follow protocol according to the SW846 Method 8260B. The initial calibration curve shall have at least five different levels of standards. The linearity of the initial calibration must be less than 30 percent RSD and RRF greater than 0.05. The low standard should be a concentration at or near the reporting limit. The laboratory should use the nearest internal standard when determining the response factor. Dilute samples with sample concentrations greater than the highest standard. The holding time shall not exceed 14 days from sample collection.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the SW846 Method 8260B. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported on a dry weight basis in  $\mu\text{g/kg}$ .

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory is to conduct matrix spike and matrix spike duplicate (MS/MSD) analyses and report the results on the appropriate form.

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the SW846 Method SW-8260B.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

I. **DATA REQUIREMENTS**

<b>Parameter</b>	<b>Detection Limit (<math>\mu\text{g/kg}</math>)</b>	<b>Precision Desired</b>
<u>Acetone</u>	<u>10</u>	$\pm 20$ percent
<u>1,1-Dichloroethene</u>	<u>5</u>	$\pm 20$ percent
<u>1,2-Dichloroethene(total)</u>	<u>10</u>	$\pm 20$ percent
<u>Ethylbenzene</u>	<u>5</u>	$\pm 20$ percent
<u>Methylene Chloride</u>	<u>10</u>	$\pm 20$ percent
<u>Methyl Ethyl Ketone</u>	<u>10</u>	$\pm 20$ percent
<u>Methyl Isobutyl Ketone</u>	<u>15</u>	$\pm 20$ percent
<u>Tetrachloroethene</u>	<u>5</u>	$\pm 20$ percent t
<u>Toluene</u>	<u>5</u>	$\pm 20$ percent
<u>1,1,1-Trichloroethane</u>	<u>5</u>	$\pm 20$ percent
<u>1,1,2-Trichloroethane</u>	<u>5</u>	$\pm 20$ percent
<u>Trichloroethene</u>	<u>5</u>	$\pm 20$ percent
<u>Vinyl Chloride</u>	<u>5</u>	$\pm 20$ percent
<u>Total Xylenes</u>	<u>5</u>	$\pm 20$ percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

## II. QC REQUIREMENTS

As required by the SW846 Methods 5035 and 8260B.

<b><u>Audit</u></b>	<b><u>Frequency of Audits</u></b>	<b><u>Limits</u></b>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>MS/MSD</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>Surrogate spiking compounds</u>	<u>surrogates spiked into all samples (incl. QC samples)</u>	<u>% recoveries must be in control</u>
<u>Internal standard compounds</u>	<u>compounds spiked into all samples (incl. QC samples)</u>	<u>areas -50 to +100% from the last daily calibration check standard</u>

## III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
PCBs in Water SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B. Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of Polychlorinated Biphenyls (PCBs) in water samples. The concentration of PCBs will be analyzed in water samples by gas chromatography/high resolution mass spectrometry. Sample results will be reported as µg/L.

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 46 water samples plus QA/QC samples (duplicates, blanks and MS/MSD). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analytical protocol taken from USEPA Method 1668.

Samples will be stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the USEPA Method 1668. The initial calibration curve shall have at least five different levels of standards. The linearity of the initial calibration must be less than 20 percent RSD. The low standard should be a concentration at or near the reporting limit. Dilute samples with sample concentrations greater than the highest standard. The holding time shall not exceed 7 days from sample collection for extraction and 40 days from extraction to sample analysis.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the USEPA Method 1668. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in the CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in µg/L.

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory is to conduct matrix spike and matrix spike duplicate (MS/MSD) analyses and report the results on the appropriate form.

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the USEPA Method 1668.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

# I. DATA REQUIREMENTS

Parameter	Detection Limit	Precision Desired
Total PCB's	(µg/L) .50	± 20 percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

5/016-6/96

**II. QC REQUIREMENTS**

As defined in US EPA Method 1668.

**III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:**

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
Cyanide SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of cyanide in water samples. The laboratory will follow CLP SOW ILM04.0-Modified. Sample results will be reported in µg/L. ILM04.0 is modified by the CLP laboratory to obtain a lower detection limit.

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 46 water samples plus QA/QC samples (field duplicates and blanks). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analysis according to the CLP SOW ILM04.0-Modified.

Samples will be preserved in the field with NaOH to pH>12, and stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.



5/016-6/96

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the CLP SOW ILM04.0-Modified. Dilute samples with sample concentrations greater than the highest standard.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the CLP SOW ILM04.0-Modified. The sample analysis data package shall include all documentation, data reporting forms and raw data specified CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in µg/L.

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the CLP SOW, 10/91.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**

David Shekoski (414)272-2426

**I. DATA REQUIREMENTS**

Parameter	Detection Limit	Precision Desired
	(µg/L)	
Cyanide	0.8	± 20 percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

5/016-6/96

**II. QC REQUIREMENTS**

As required by the CLP SOW ILM04.0-Modified.

**III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:**

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
BNAs in Soil SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B. Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. General description of analytical service requested:

Analysis of phenol and 1,2-dichlorobenzene in soil samples. The concentration of phenol and 1,2-dichlorobenzene will be analyzed in soil samples by gas chromatography/mass spectrometry (GC/MS). Sample results will be reported on a dry weight basis in  $\mu\text{g}/\text{kg}$ .

2. Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):

Analysis of a minimum of 20 soil samples plus QA/QC samples (duplicates and MS/MSD). All samples are low concentration soil samples.

3. Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):

Superfund-Remedial

4. Estimated date(s) of collection:

1999

5. Estimated date(s) and method of shipment:

Method of shipment will be by overnight carrier.

6. Number of days analysis and data required after laboratory receipt of samples:

The laboratory will be required to provide results within 21 days of receipt of samples.

7. Analytical protocol required (attach copy if other than a protocol currently used in this program):

Analytical protocol taken from SW846 Method 8270C.

Samples will be stored at 4 C until analysis and validation of results.

Note: Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the SW846 Method 8270C. The initial calibration curve shall have five different levels of standards. The linearity of the initial calibration must be less than 30 percent RSD and RRF greater than 0.05. The low standard should be a concentration at or near the reporting limit. The laboratory should use the nearest internal standard when determining the response factor. Dilute samples with sample concentrations greater than the highest standard. The holding time shall not exceed 14 days to extraction and 40 days to analysis from the date of sample extraction.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the SW846 Method 8270C. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in the CLP SOW. Only the two compounds specified are to be reported.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported on a dry weight basis in  $\mu\text{g}/\text{kg}$ .

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory is to conduct matrix spike and matrix spike duplicate (MS/MSD) analyses and report the results on the appropriate form.

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the SW846 Method 8270C.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

**I. DATA REQUIREMENTS**

<b>Parameter</b>	<b>Detection Limit (<math>\mu\text{g/kg}</math>)</b>	<b>Precision Desired</b>
Phenol	<u>330</u>	$\pm$ 20 percent
<u>1,2-Dichlorobenzene</u>	<u>330</u>	

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

**II. QC REQUIREMENTS**

As required by the SW846 Method 8270C.

<b><u>Audit</u></b>	<b><u>Frequency of Audits</u></b>	<b><u>Limits</u></b>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>MS/MSD</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>Surrogate spiking compounds</u>	<u>surrogates spiked into all samples (incl. QC samples)</u>	<u>% recoveries must be in control</u>
<u>Internal standard compounds</u>	<u>compounds spiked into all samples (incl. QC samples)</u>	<u>areas -50 to +100% from the last daily calibration check standard</u>

**III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:**

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
BNAs in Water SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of base/neutral/acid extractable compounds (BNAs) in water samples. The concentration of BNA compounds will be analyzed in water samples by gas chromatography/mass spectrometry (GC/MS). Sample results will be reported as µg/L.

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 46 water samples plus QA/QC samples (duplicates and MS/MSD). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analytical protocol taken from SW846 Method 8270C.

Samples will be stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the SW846 Method 8270C. The initial calibration curve shall have five different levels of standards. The linearity of the initial calibration must be less than 30 percent RSD and RRF greater than 0.05. The low standard should be a concentration at or near the reporting limit. The laboratory should use the nearest internal standard when determining the response factor. Dilute samples with sample concentrations greater than the highest standard. The holding time shall not exceed 7 days to extraction and 40 days to analysis from the date of sample extraction.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the SW846 Method 8270. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in CLP SOW. Only those compounds specified in this SAS are to be reported.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in µg/L.

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory is to conduct matrix spike and matrix spike duplicate (MS/MSD) analyses and report the results on the appropriate form.

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the SW846 Method 8270C.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

11. **Name of sampling/shipping contact and phone number:**  
David Shekoski (414)272-2426

## I. DATA REQUIREMENTS

Parameter	Detection Limit ( $\mu\text{g/L}$ )	Precision Desired
<u>Bis(2-ethylhexyl) Phthalate</u>	<u>1.3</u>	$\pm 20$ percent
<u>Di-n-butyl Phthalate</u>	<u>10</u>	$\pm 20$ percent
<u>1,2-Dichlorobenzene</u>	<u>10</u>	$\pm 20$ percent
<u>Diethyl Phthalate</u>	<u>10</u>	$\pm 20$ percent
<u>Isophorone</u>	<u>1.3</u>	$\pm 20$ percent
<u>Naphthalene</u>	<u>10</u>	$\pm 20$ percent
<u>Phenol</u>	<u>10</u>	$\pm 20$ percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

## II. QC REQUIREMENTS

As required by the SW846 Method 8270C.

<u>Audit</u>	<u>Frequency of Audits</u>	<u>Limits</u>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>MS/MSD</u>	<u>at least one per group of 20 or fewer samples</u>	<u>% recovery within historical acceptance limits</u>
<u>Surrogate spiking compounds</u>	<u>surrogates spiked into all samples (incl. QC samples)</u>	<u>% recoveries must be in control</u>
<u>Internal standard compounds</u>	<u>compounds spiked into all samples (incl. QC samples)</u>	<u>areas -50 to +100% from the last daily calibration check standard</u>

## III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.



5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number  
Chromium VI SAS

SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of hexavalent chromium (Cr+6) in water samples. The laboratory will follow SW846 Methods 7195, 7196A, or 7197. Sample results will be reported in µg/L

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 43 water samples plus QA/QC samples (field duplicates and blanks). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

The samples shall be Analyzed in accordance with SW846 Method 7195, 7196A, or 7197.

Samples will be stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

**8. Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the SW846 Method 7195, 7196A, or 7197. Dilute samples with sample concentrations greater than the highest standard. **Samples shall be analyzed within 24 hours of sample collection.**

**9. Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the SW846 Method 7195, 7196A, or 7197. The sample analysis data package shall include all documentation, data reporting forms and raw data as specified in CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in  $\mu\text{g/L}$ .

**10. Other (use additional sheets or attach supplementary information, as needed):**

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the CLP SOW, 10/91.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

**Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.**

**11. Name of sampling/shipping contact and phone number:**

David Shekoski (414)272-2426

**I. DATA REQUIREMENTS**

Parameter	Detection Limit	Precision Desired
	( $\mu\text{g/L}$ )	
<u>Chromium VI (Cr+6)</u>	<u>10</u>	$\pm$ 35 percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

**II. QC REQUIREMENTS**

5/016-6/96

As required by the SW846 Method 7195, 7196A, or 7197.

<u>Audit</u>	<u>Frequency of Audits</u>	<u>Limits</u>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>+/- 15% recovery</u>
<u>Matrix Spike</u>	<u>at least one per group of 20 or fewer samples</u>	<u>75-125% recovery</u>
<u>Laboratory duplicate</u>	<u>surrogates spiked into all samples (incl. QC samples)</u>	<u>&lt;20 % RPD</u>

**III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:**

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.

5/016-6/96

U.S. Environmental Protection Agency Region V  
SFD/Contracts Mgmt. Section  
77 West Jackson, SM-5J  
Chicago, Illinois 60604  
PHONE: (312) 886-1488 FAX: (312) 886-0753

SAS Number As SAS
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SPECIAL ANALYTICAL SERVICES  
Client Request

[ X ] Regional Transmittal

A. EPA Region/Client: Region V  
B. Howard Pham Technical Project Manager (TPM): C. Moore  
C. Telephone Number: (312) 353-2310 (312) 886-1488  
D. Date of Request: May 7, 1999  
E. Site Name: Environmental Conservation and Chemical Corporation (ECC) Site

Please provide below a description of your request for Special Analytical Services under the Contract Laboratory Program. In order to most efficiently obtain laboratory capability for your request, please address the following considerations, if applicable. Incomplete or erroneous information may result in delays in the processing of your request. Please continue response on additional sheets, or attach supplementary information as needed.

1. **General description of analytical service requested:**

Analysis of arsenic in water samples. The laboratory will follow U.S. EPA Method 1632. Sample results will be reported in µg/L

2. **Definition and number of work units involved (specify whether whole samples or fractions; whether aqueous or soil and sediments; and whether low, medium, or high concentration):**

Analysis of 43 water samples plus QA/QC samples (field duplicates and blanks). All samples are low concentration water samples.

3. **Purposes of analysis (specify whether Superfund [Remedial or Enforcement], RCRA, NPDES, etc.):**

Superfund-Remedial

4. **Estimated date(s) of collection:**

1997 to 2005

5. **Estimated date(s) and method of shipment:**

Method of shipment will be by overnight carrier.

6. **Number of days analysis and data required after laboratory receipt of samples:**

The laboratory will be required to provide results within 21 days of receipt of samples.

7. **Analytical protocol required (attach copy if other than a protocol currently used in this program):**

Analysis according to the U.S. EPA Method 1632.

Samples will be preserved in the field with HNO<sub>3</sub> to pH<2, and stored at 4 C until analysis and validation of results.

**Note:** Laboratory data rejection and non-payment will be recommended if methods other than those specified in this document are used.

5/016-6/96

8. **Special technical instruction (if outside protocol requirements, specify compound names, CAS numbers, detection limits, etc.):**

Follow protocol according to the U.S. EPA Method 1632. Dilute samples with sample concentrations greater than the highest standard.

9. **Analytical results required (if known, specify format for data sheets, QA/QC reports, Chain of Custody documentation, etc.). If not completed, format of results will be left to program discretion.**

The laboratory shall perform data reduction and shall report sample analysis data and quality control information as designated in the U.S. EPA Method 1632. The sample analysis data package shall include all documentation, data reporting forms and raw data as similar in the CLP SOW.

All procedures used shall be clearly identified. All original raw data, forms, calculation worksheets, instrument read-outs, preparation forms, internal sample and/or extract chain of custody forms, strip charts and copies of pages from preparation and analysis logbooks shall be submitted. If originals were submitted in another data package, photocopies may be submitted with a record of the location of the originals.

All records of analysis and calculations shall be legible and be sufficient to recalculate all sample concentrations and QA audit results. QC reference samples or initial calibration standards shall be identified as to source, lot number and sample number.

Results will be reported in µg/L.

10. **Other (use additional sheets or attach supplementary information, as needed):**

The laboratory should provide a summary of their most recent MDL study using those protocols. The laboratory shall adhere to chain-of-custody and document control procedures described in the CLP SOW, 10/91.

All original sample tags, chain of custody forms, SAS packing lists, airbills and any other original receiving or transmittal forms or copies of receiving logbook pages pertaining to this SAS shall be submitted to the Region within the time frame listed in section 6 above. Photocopies may be submitted with a record of the location of the originals.

Payment to laboratories for this SAS analysis may be reduced if all procedures noted above are not followed and all required deliverables noted above are not supplied. The Region or its contractors shall not be charged further for the provision of required deliverables within this agreement.

11. **Name of sampling/shipping contact and phone number:**

David Shekoski (414)272-2426

**I. DATA REQUIREMENTS**

Parameter	Detection Limit (µg/L)	Precision Desired
Arsenic	0.0175	± 35 percent

**Note:** These are minimum requirements. Report actual detection limit(s) used, based on allowable methodology options.

## II. QC REQUIREMENTS

As required by the U.S. EPA Method 1632.

<u>Audit</u>	<u>Frequency of Audits</u>	<u>Limits</u>
<u>Method Blank</u>	<u>at least one per group of 20 or fewer samples</u>	<u>concentration &lt; detection limit</u>
<u>Laboratory control sample</u>	<u>at least one per group of 20 or fewer samples</u>	<u>+/- 20% recovery</u>
<u>Matrix Spike</u>	<u>at least one per group of 20 or fewer samples</u>	<u>80-120% recovery</u>
<u>Matrix Spike Duplicate</u>	<u>at least one per group of 20 or fewer samples</u>	<u>80-120% recovery; &lt;20% RPD</u>
<u>Serial Dilution</u>	<u>at least one per group of 20 or fewer samples</u>	<u>10 % Difference</u>

## III. ACTION REQUIRED IF LIMITS ARE EXCEEDED:

Take corrective action. Contact the Region for problems that might result in the delay of reporting sample results.